

X. TRAIL DEVELOPMENT AND MANAGEMENT STANDARDS

The NPS, in conjunction with the WDNR and the IAPTF, is developing a handbook on trail design, construction, and maintenance for the Ice Age NST. This handbook will provide detailed guidance on a variety of trail issues for planners and developers of the Ice Age NST across the state. This section provides introductory material on these issues. For each individual trail segment, the managing authority will make the final development and management decisions.

The way in which the Ice Age NST is designed, developed and maintained should make it easily recognizable as a National Scenic Trail (NST). The 1966 Department of Interior report, "Trails for America," which helped set the stage for eventual passage of the National Trails System Act 2 years later, described NSTs as very special trails: "A standard of excellence in the routing, construction, maintenance, and marking consistent with each trail's character and purpose should distinguish all national scenic trails. Each should stand out in its own right as a recreation resource of superlative quality and of physical challenge." It is important that the collective effort of the many partners involved in this project maintains the Ice Age Trail's national significance and superlative qualities. The most basic way to accomplish this is to ensure that the trail is planned, established, and managed with a level of consistency over its entire length that conveys a sense of "connectedness" and continuity to the users. Quality design and construction of the trail, parking lots, and other facilities; clear and consistent signage, and timely response to problems created by storms or routine recreational use all help to maintain this consistency and foster pride in the trail. Regular cleanups of litter and a timely response to other public concerns about trail-related problems ensure that the trail will be a welcome addition to a community or area.

A. Development

Layout

The route of Ice Age NST generally follows the glacial features and moraines left by the Wisconsin Glaciation. The goal of those working on the trail and of Congress in authorizing the trail is that it be established within a permanently protected trailway corridor. The Ice Age NST will be designed to take advantage of the recreational, scenic, educational and cultural opportunities present along this route. The route of the trail will minimize negative impacts on natural resources, cultural resources, the human environment, and adjacent land uses. Some basic principles that are used when laying out a route include:

- Traverse a variety of glacial features that are located in a visually pleasing corridor.
- Provide for a diverse user experience by incorporating a variety of plant communities, terrain, open and enclosed spaces (e.g. forests, savannas, prairies, etc.).
- Provide vistas to broader landscapes for scenic and interpretive purposes.
- Link and protect significant biologic, archeologic, and geologic sites.

- Connect or provide linkages to communities and other trails for recreational, environmental, and/or user support purposes.
- Obtain local landowner and town support.
- Use publicly-owned land for support facilities.
- Design the trail to reflect and be sensitive to the surrounding area.

Construction/Maintenance of Trail and Trail-Related Structures

The Recreational Opportunity Spectrum (ROS), developed by the U.S. Forest Service, provides a framework for defining classes of outdoor recreation environments. These classes are useful guides for trail construction and management decisions. A modified form of the ROS reflecting the recreational environment of the Ice Age NST has been adopted, resulting in three broad categories of recreation settings--urban, rural/roaded natural and semi-primitive.

- **Urban** settings are characterized by substantially urbanized and modified natural environments. Large numbers of visitors may be present, both on-site and in adjoining areas. Sections of the Ice Age NST following sidewalks through towns or on highly developed linear parkways are described as "urban."
- **Rural/Roaded Natural** settings are characterized by a more natural appearing environment with moderate evidence of human activity. Resource modification is evident but it is also harmonious with the natural environment. "Rural" settings are typically farmland or pastoral landscapes. "Roaded Natural" settings are mainly forested lands. Similar standards apply to trails being constructed through both types of settings. The majority of the Ice Age NST will pass through "Rural" and "Roaded Natural" areas including exurban and agricultural landscapes.
- **Semi-Primitive** settings are characterized by a predominately natural appearing environment of moderate to large size. Interaction between visitors is low and there is evidence of only minimal human activity. The Chequamegon National Forest is the only place along the Ice Age NST route where the trail is planned through this type of setting.

Typically, before new trail is constructed, a site plan will be developed to guide the layout, design and maintenance of the trail and related structures. Design standards will reflect the ROS setting determination for the segment, resource considerations, and accessibility levels. Figures 1, 2 and 3 outline trail specifications for the three classes of trail settings. A typical trail cross-section is shown in Attachment 2.

Crossing broad expanses of wetland will be avoided by careful trail planning. Where it is necessary to cross creeks, wetlands, and other seasonally wet areas, boardwalks and simple bridges will be used. Many proven designs using native material or treated timbers and

boards can be found in the sources listed in Tools of the Trail: A Bibliography on Planning, Advocating, Designing, Building, Maintaining and Managing Trails Throughout America. In all instances, wetlands will be treated in accordance with NPS standards and guidelines and Wisconsin's Wetland Act. (See Impacts to Floodplains/Wetlands/Water Quality).

Signing

The trail will be marked with 2 by 6-inch vertical yellow paint blazes or small plastic markers placed on trees or posts, facing the hiker coming from either direction. Small, 3 1/2-inch Ice Age NST emblems will be placed where the trail crosses minor roads and at about half-mile intervals along the trail. Large, 9-inch Ice Age NST emblems will be placed at major trailheads and major road crossings. Primary trail access points should also have informational kiosks or signs with specific information about the adjacent trail segments. Regulatory signs will be posted as needed.

Support Facilities

Support facilities provide for hiker convenience, comfort and sanitation. These structures should be designed to harmonize with the surrounding environment and reflect the ROS determination for the trail segment. Whenever possible, parking and other support facilities will be provided in nearby communities. They may also be provided on County, State and Federal lands. Figure 2 outlines support structure specifications for the three classes of trail settings.

B. Management

Recreational Uses

The 1983 Comprehensive Plan for the Ice Age NST states that the trail is primarily intended to be a hiking trail. Travel on foot is the one use that must be provided on all segments of the trail.

Although the trail is designed primarily as a hiking trail, other compatible recreational uses are encouraged (such as photography, birdwatching, and snowshoeing). In addition, the trail will accommodate ungroomed cross country skiing on segments that are designed and constructed for this use. In general, horses and bikes are not allowed on the trail except for those sections that follow State Rail-Trails (such as the Military Ridge, Ahnapee and Tuscobia). Additional occasional travel on or across the trail with motorized vehicles by the landowner or manager for the purpose of managing and using their land is permitted.

Sections of the Ice Age NST that pass through lands open to hunting (e.g. State Wildlife Areas) will remain open to hunting. Managing authorities may choose to discourage or

prohibit non-hunting use of the trail during certain game seasons. On private lands, if a landowner grants permission for trail passage either informally or through permanent easement, hunting privileges are conveyed only if stated in the agreement. The majority of the State lands acquired under the Stewardship Program will be closed for hunting. In addition, other lands which are posted "closed" to hunting will remain closed after trail development.

The National Trails System Act specifies that National Scenic Trails may not be open to motorized use by the general public. However, the 1980 amendment authorizing the Ice Age NST also specified that segments could be open to snowmobiling, where it is deemed appropriate by the managing authority responsible for the segment and the Secretary of the Interior. Like horseback riding or bicycling, limited snowmobiling opportunities are available. These are located primarily on State Rail-Trails which are included as part of the Ice Age NST route.

Accessibility

The Ice Age NST will be designed to ensure that people with a wide range of ability levels have the opportunity to experience the significant resources that make it unique. At the same time, planners will strive to maintain the generally rustic character of a National Scenic Trail. To accomplish these goals, the trail will provide a range of opportunities to accommodate individuals who enjoy a challenge, as well as those who prefer easier, non-strenuous hiking.

Some segments of the trail will be fully accessible. These segments are designed to improve access for persons with mobility and vision impairments. They meet a number of specifications addressing width, passing space, surface, running slope, cross slope, edging, clear headroom, rest areas, signage and information points. Generally, these sites are usable without assistance by all but the most severely disabled persons. Multi-use trails near urban areas should be fully accessible, accommodating wheelchairs, strollers, and hikers of all abilities.

Some segments of the trail will be designed to provide a more challenging experience, while still accommodating use by individuals with disabilities. Facilities remain fully accessible, but the trail grades and surface materials may be more challenging to persons with limited mobility. When possible, these "barrier-free" segments are constructed without possible impediments to movement (such as steps, waterbar, fords, stepping stones and narrow bridges). However, they offer a higher level of risk and challenge than "fully accessible" sites and some disabled users may need assistance.

Portions of the trail will not be designed to accommodate persons with disabilities. In some cases, the contours of the land or the natural surface of rocks and roots present impediments which cannot be removed without causing major impacts on the environment or drastically altering the desired character of the trail. Other factors influencing decisions on accessibility

include the protection of natural and cultural resources, the trail setting and the availability of the resources to develop and maintain the trail to accessibility standards.

The Ice Age NST should provide all individuals, including those who are disabled, the opportunity to choose trails that provide different experiences and varying degrees of challenge and difficulty. "Universal Access to Outdoor Recreation" is one source of information for designing accessible trails and trail-related facilities.

Law Enforcement

The Ice Age NST as a partnership endeavor, is a patchwork of ownership and managing authorities; no single entity owns and manages the entire trail. However, because State Statutes allow the permanent dedication of lands to the State, the WDNR will likely own a large portion of the trailway, eventually. As lands come under their ownership, the WDNR may enter into agreements with local units of government or with the IAPTF for cooperative management of the trailway. State Conservation Officers have enforcement authority on all WDNR-owned lands.

Some trail segments will be on county or municipal lands and will be under the direct protection and enforcement of these local authorities. Additional trailway lands may be owned by the IAPTF, or may be on private lands under an easement or agreement with the IAPTF. Volunteers will monitor trail developed on private lands and will alert local law enforcement officials of any issues requiring their attention. The County Sheriff has jurisdiction over all lands in the county, including those used for the Ice Age NST. However, experience and research have shown that linear trails have few law enforcement problems.

The IAPTF stresses low impact trail use through signage, literature and public contact along the trail. Experience has shown that hikers leave very little litter and generally pack out what they pack in. Concentrations of litter normally occur near roads and other access points and are easy to monitor. If littering does occur, volunteers will clean it up during regularly scheduled trail maintenance.

FIGURE 1

TRAIL CONSTRUCTION DESIGN STANDARDS

Standards (desired)	ROS Class		
	Urban	Rural and Roaded Natural	Semiprimitive
<u>Tread Width</u>			
Hiking Segments	48"	24"	18"
Accessible Segments	60"	36"	28"
<u>Clearing Width</u> (each side of tread))	24"	12" (WDNR-24")	12"
<u>Clearing Height</u> (min.)	10'	8' (WDNR-10')	8'
<u>Slope(max.sustained)</u>			
Hiking Segments	10%	10%	15%
Accessible Segments	5%	8%	12%
<u>Slope (max.)</u>			
Hiking Segments	15% for 100'	20% for 100'	30% for 100'
Accessible Segments	8% for 30'	10% for 50'	10% for 50'
<u>Cross Slope (max)</u>	3%	5%	8%
<u>Other Accessible Segment Standards</u>			
Passing Spot Int.-max	N/A	600'	1200'
Rest Area Interval-max	1200'	1200'	½ mile
<u>Surfaces</u>	Asphalt. Concrete. Stabilized- aggregate. Screening(1). Wood Chip. Sod.	Native. Wood Chip(2). Stabilized-aggregate. Screening(1).	Native
<u>Accessible Surfaces</u>	Asphalt. Concrete. Stabilized- aggregate.	Asphalt. Stabilized-aggregate.	Native. Stabilized- aggregate.

(1) Limestone screenings include the fines.

(2) Not in wet areas--adds to the problem.

FIGURE 2
DESIGN STANDARDS FOR TRAIL STRUCTURES

Standards (desired)	ROS Class		
	Urban	Rural and Roaded Natural	Semiprimitive
Bridges (width)			
Hiking Segment	60"	36"	28"
Accessible Segment	72"	48"	36"
Bridge Railings			
Hiking Segment	Y	Formula (1)	Formula(1)
Accessible Segment	Y	"	"
Bridge Rail Height	42"	42"	42"
Bridge Engineering Design	Y	If length > 25 ft. or height > 5 ft.	Same as at left.
Clearance above Navigable Waters(2)	5'	5'	5'
Bridge Kickplate Required (3)			
Hiking Segment	Y	N	N
Accessible Segment	Y	Y	Y
Other Structures			
Puncheon (4)			
Hiking Segment	N/A	16-18" width	16-18" width
Accessible Segment	N/A	N/A	N/A
Boardwalk(5)			
Hiking Segment	60"	36"	28"
Accessible Segment	72"	48"	36"
Corduroy			
Hiking Segment	N/A	(6)	(6)
Accessible Segment	N/A	N/A	N/A
Culverts(7)	OK	OK	OK

- (1) Railings are required if: $(\frac{1}{2}\text{length} \times \text{height}^2)/\text{width} \geq 40$
- (2) Navigability as defined by the individual state. Clearance requirement may vary.
- (3) Kickplates are often included for safety when handrails are not required.
- (4) Puncheon rests on sills and is generally less than 1' high.
- (5) Boardwalk is generally less than 2' above water level and should have kickplates.
- (6) Generally not acceptable--but can be used as a temporary measure in areas not defined as wetlands.
- (7) Calculate length to provide for 2:1 fill slope beyond the normal trail clearing. Size (engineering consultation) to accommodate peak flows. Water crossing permits often required.

Figure 3

STANDARDS FOR TRAIL SUPPORT FACILITIES

Standards (minimum)	ROS Class		
	Urban	Rural and Roaded Natural	Semiprimitive
<u>Primary Trailhead</u> (1)	As needed.	Spacing 5 miles or <u>less</u> when actual or desired use is high. Spacing 10 miles or <u>more</u> when actual or desired use is low.	Spacing 10 miles or more.
<u>Campsite/Shelter</u>	N/A	Spacing 8-15 miles. Especially needed when dispersed camping along the route is not permissible.	
<u>Water</u>	Obtain from public facility or home.	Spacing 10-15 miles when potable or treatable water is not available.	Spacing 20-30 miles when potable or treatable water is not available.
<u>Toilet Facility</u>	As needed.	At high use areas, campsites, trailheads, and other public areas as necessary.	As needed for resource protection.
<u>Bench</u>	<u>May</u> be provided at selected view spots or rest areas.		Not applicable.

(1) Primary trailheads will provide parking for a number of vehicles and contain a bulletin board or kiosk for trail information. They may be part of an existing recreation facility or can be located where the trail crosses a highway or major road.